East & West Deschutes County Community Wildfire Protection Plan

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Prepared by

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Declaration of Agreement

The Healthy Forests Restoration Act requires that the applicable local government, the local fire department, and the state entity responsible for forest management agree to the Community Wildfire Protection Plan. The undersigned have reviewed the East & West Deschutes County CWPP and agree to this completed document.

_____ _____

John Kopser, Chair — Date
Brothers Rangeland Fire Protection Association

_____ _____

Carolyn Chase — Date
Alfalfa CWPP Steering Committee

_____ _____

Travis Medema, District Forester — Date
Oregon Department of Forestry

_____ _____

Mike Daly, Chair — Date
Deschutes County Board of Commissioners

_____ _____

Dennis Luke, Commissioner — Date
Deschutes County Board of Commissioners

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Tammy Baney, Commissioner — Date
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East & West Deschutes County Community Wildfire Protection Plan

Due to the unique geographical, topographical and vegetative variations across Deschutes County, each incorporated area within the county elected to complete a CWPP specific to its own population and region. Six Community Wildfire Protection Plans have been completed and implemented prior to this plan that have helped shape the process and ensure success of this seventh and final plan for Deschutes County. This Community Wildfire Protection Plan encompasses the remaining unincorporated and/or unprotected wildland urban interface areas in Deschutes County not included in the previous six plans.

Wildland fire is a natural and necessary component of ecosystems across the country. Central Oregon is no exception. Historically, wildland fires have shaped the forests and rangelands valued by residents and visitors. These lands in the east, south and west portions of Deschutes County are now significantly altered due to fire prevention efforts, modern suppression activities and a general lack of large scale fires. The result on the west end of the county is large tracts of overstocked ponderosa, mixed conifer and lodgepole pine forests with dense ground fuels of bitterbrush and saplings. On the east side of the county, the effect on the rangelands and grasslands is seen in the replacement of native bunchgrass and ponderosa pine with sage, juniper and cheat grass. Although vastly different in vegetation and topography, these ecosystems are now similarly altered to a state which allows fires to burn rapidly and more intensely than in the past with an increased capacity to threaten lives and property.

Within these boundaries, there is a significant amount of public land with numerous destination resorts, and developed and dispersed recreation sites which provide valuable recreation opportunities to both residents and visitors in Deschutes County. In the summer months, transient populations of up to 40,000 people occupy these areas creating a seasonal challenge for those agencies responsible for fire suppression and evacuation. In addition, the recent explosion in population has led to increased residential development in forested areas, in the wildland urban interface (WUI). To address these and other related issues, members of fire agencies, local businesses and organizations,

and individuals collaborated to develop the East & West Deschutes County Community Wildfire Protection Plan.

The identification of priority areas for hazardous fuels treatment in these areas along with the identification of treatment standards are key components of this plan.

Purpose

The purpose of the East & West Deschutes County Community Wildfire Protection Plan (CWPP) is to:

- Protect lives and property from wildland fires;
- Instill a sense of personal responsibility and provide steps for taking preventive actions regarding wildland fire;
- Increase public understanding of living in a fire-adapted ecosystem;
- Increase the community's ability to prepare for, respond to and recover from wildland fires;
- Restore fire-adapted ecosystems;
- Improve the fire resilience of the landscape while protecting other social, economic and ecological values.
- Provide guidance to federal agencies for implementing fuels reduction treatments;
- Prioritize the use of limited funds for the treatment of hazardous fuels; and
- Promote biomass utilization.

This document outlines the priorities, strategies and action plans for fuels reduction treatments in the unincorporated and/or unprotected areas in the eastern and western portions of Deschutes County in the wildland urban interface. This CWPP also addresses special areas of concern and makes recommendations for reducing structural vulnerability and creating defensible spaces in the identified communities at risk. It is intended to be a living vehicle for fuels reduction, educational, and other projects to decrease overall risks of loss from wildland fire; updated and revisited at least annually to address its purpose.

Although reducing the risk of catastrophic wildland fire is the primary motivation behind this plan, managing the forests and wildlands for hazardous fuels reduction and fire resilience is only one part of the larger picture. Residents and visitors desire healthy, fire-resilient forests and wildlands that provide habitat for wildlife, recreational opportunities, and scenic beauty.

The East & West Deschutes County Community Wildfire Protection Plan will assist in the identification of surrounding lands, including federal and state lands, at risk from catastrophic wildland fire. This plan also identifies priorities and standards for reducing hazardous wildland fuels while improving forest and rangeland health, supporting local industry and economy and improving fire protection capabilities. It also identifies strategies to address special areas of concern such as critical transportation and evacuation routes, as well as outlines actions that individuals can take to help protect themselves and their neighborhoods against the threat of wildland fires.

Collaboration

In 2003, Congress passed historical bi-partisan legislation: the Healthy Forests Restoration Act (HFRA). This legislation directs federal agencies to collaborate with communities in developing a Community Wildfire Protection Plan (CWPP) which includes the identification and prioritization of areas needing hazardous fuels treatment. It further provides authorities to expedite the National Environmental Policy Act (NEPA) process for fuels reduction projects on federal lands. The act also requires that 50% of funding allocated to federal fuels projects be used in the wildland urban interface.

For the first time, communities have the opportunity to direct where federal agencies place their fuels reduction efforts. With a Community Wildfire Protection Plan in place, community groups can apply for grants to treat hazardous fuels and address special concerns to reduce the risk of catastrophic loss as a result of wildland fire.

Three Steering Committees collaborated to develop this plan. In each of the communities of Alfalfa and Brothers/Hampton, local residents came together with representatives from Deschutes County Rural Fire Protection District #2, Oregon Department of Forestry (ODF), the USDA Forest Service (USFS), the USDI Bureau of Land Management (BLM), Deschutes County and Project Wildfire to develop the priorities and recommendations for the eastern regions of the county.

For planning in the western and southern regions of the county, these same representatives collaborated with special use permitees who lease federal lands for recreational and resort use to develop priorities and recommendations for these regions of Deschutes County.

The overall plan was created by these Steering Committees in accordance with *Preparing a Community Wildfire Protection Plan: A Handbook for Wildland-Urban Interface Communities* (Communities Committee, Society of American Foresters, National Association of Counties, National Association of State Foresters 2005); and Deschutes County Resolution 2004-093.

A draft of the East & West Deschutes County CWPP was available for public comment for 30 days prior to the final signing and approval of the plan. Interested parties provided comments for consideration by the Steering Committees during this period.

The East & West Deschutes County CWPP was also formally adopted by Deschutes County by resolution # 2007-148 on November 28, 2007.

Background information

Deschutes County is located in central Oregon and is a rapidly growing social, economic and recreational destination. Estimates from Portland State University put the 2006 population at 152,615 – up 32.3% since 2000. Portland State University also reports that 50,495 residents live in the unincorporated areas within the county.

According to Recreation Information Management data from Deschutes National Forest, the recreational areas included in this CWPP planning area are occupied by as many as 40,000 people from June 1st through September 15th of each year.

The East & West Deschutes County CWPP addresses four project areas: West, Paulina & East Lakes, Alfalfa and Brothers/Hampton.

The western portion of Deschutes County and the southern region around Paulina Lake and East Lake were historically characterized by open stands of ponderosa pine and native grasslands. Following logging in the first half of the 1900's many of these stands naturally regenerated to lodgepole pine. Lodgepole pine is a species that lives and dies by high intensity and active stand replacement crown fires. It is therefore less desirable from a wildland fire perspective because of the risk these stands pose to the communities and activities in the area. Today, with less stand management, logging activity and highly effective wildland fire suppression, the forestland is predominantly dense lodgepole pine with some mixed stands of lodgepole and ponderosa pine. Much of the understory consists of dense bitterbrush and manzanita with some areas of native bunchgrasses. Due to the lack of disturbance, these stands continue to become more and more overcrowded.

In the Alfalfa area, the historical vegetation included ponderosa pine, western juniper and sagebrush. Today, the mix is more western juniper and sage than 100 years ago, with sporadic ponderosa pine.

Historically, the Brothers/Hampton area included a mix of sagebrush, western juniper and some ponderosa pine. This vegetation type was maintained by frequent low to moderate intensity fires. Today, the Brothers/Hampton area is characterized by widespread stands of western juniper, western sage and non-native grasses, predominantly cheat grass.

As part of the ongoing wildland fire risk management of the surrounding public and private forestlands, the US Forest Service, the Bureau of Land Management, Oregon Department of Forestry, and private landowners are engaged in hazardous fuels treatment projects across the county in or near these areas.

Currently, under the combined management of the Central Oregon Fire Management Service (COFMS), the US Forest Service and the Bureau of Land Management are involved in multiple fuels projects in WUI areas that stretch across this CWPP planning area.

As of November 2007, these include:

- East Tumbull – proposed treatment of 4,500 acres of hazardous fuels along Cascade Lakes Highway; now in the implementation stage.
- Snow – proposed treatment of hazardous fuels south of Hosmer Lake and north of Crane Prairie Reservoir along Cascade Lakes Highway; currently in planning stage.
- Sparky – proposed treatment of hazardous fuels along Highway 46 (Cascade Lakes Highway) north and west of Mt. Bachelor; currently in the planning stage.
- Sunriver HFRA – proposed treatment of hazardous fuels west of Sunriver; currently in planning stage.
- Deadlog – proposed treatment of hazardous fuels in the Brothers Wildland Fire Use area; currently in planning stage.

In addition to these current and planned projects, COFMS is also managing the implementation and completion of several other projects.

Oregon Department of Forestry (ODF) is currently engaged in multiple projects including the West Bend Fuel Break along the FS 4606 Road and ongoing defensible space projects with large landowners across Deschutes County to help individual landowners comply with the Oregon Forestland-Urban Interface Fire Protection Act of 1997 also known as Senate Bill 360.

In the Millican, Hampton and Brothers communities, ODF has worked with local residents to form a Rangeland Fire Protection Association to improve the wildland fire response.

Community Base Maps

Utilizing the best available information and data from the US Forest Service, Oregon Department of Forestry, the Fire Learning Network and Deschutes County databases, the Steering Committees relied on the following maps and GIS data to complete the risk assessment process:

- Alfalfa area WUI boundaries with identified Communities at Risk
- Brothers/Hampton area WUI boundaries with identified Communities at Risk
- West WUI boundaries with identified Communities at Risk
- Paulina & East Lakes WUI boundaries with identified Communities at Risk
- 2006 Deschutes County tax lot and population data
- Wildland fire starts in the last ten years
- Current Fire Regime - Condition Class

This information is located in Appendix A.

Community Profiles

This CWPP addresses four project areas which are profiled below: West, Paulina & East Lakes, Alfalfa and Brothers/Hampton. For each area, the appropriate Steering Committee carefully identified characteristics including population, geographic and vegetative information.

Each group also identified wildland urban interface (WUI) areas, or Communities at Risk, within each project area according to the Healthy Forests Restoration Act.

The Healthy Forests Restoration Act defines wildland urban interface as an area within or adjacent to an at-risk community that has been identified by a community in its wildfire protection plan. For areas that do not have such a plan, it is identified as:

- extending ½ mile from the boundary of an at-risk community,
- extending 1½ miles from the boundary of an at-risk community when other criteria are met such as a sustained steep slope or a geographic feature that creates an effective firebreak, or is classified as Condition Class 3 land,
- adjacent to an evacuation route.

The Healthy Forest Initiative (HFI) and the Healthy Forests Restoration Act (HFRA) define a "community at risk" from wildland fire as one that:

- is a group of homes and other structures with basic infrastructure and services in or adjacent to federal land;
- has conditions conducive to large-scale wildland fire; and
- faces a significant threat to human life or property as a result of a wildland fire.

West

The western region of Deschutes County encompasses 480,007 acres (750 square miles) of heavily forested ponderosa, mixed conifer and lodgepole pine. The forest floor is thick with bitterbrush, rabbitbrush, down wood and other native and non-native species.

The western region of Deschutes County presents a unique challenge for the wildfire planning process. COFMS manages 427,152 acres or 89% of the land in this area, and allows for long term leases by special use permitees at recreation sites. These include Crane Prairie Resort, Cultus Lake Resort, Elk Lake Resort, Twin Lakes Resort and numerous other developed and dispersed recreation sites including trailheads to the wilderness areas in the Cascade Mountains.

These resorts and recreation sites are nationally recognized for outstanding camping, fishing and recreational opportunities. This area serves a transient population that tops 40,000 on any given weekend during the summer months, during the height of fire season. In the event of a wildfire, this area presents tremendous challenges for fire suppression, evacuation and general life safety.

The eastern edge of the planning boundary meets the west side of the Bend CWPP, Sunriver, Upper Deschutes River Coalition and Greater La Pine CWPP boundaries and the northern portion of the planning area is bordered by the Greater Sisters Country CWPP boundary and the Deschutes/Jefferson County line. The western edge of the planning area is the Deschutes/Linn and Deschutes/Lane County lines while the southern portion is flanked by the Deschutes/Klamath County line. See Appendix A for maps of this area.

Unlike the previous six CWPPs, the standard 1½ mile boundary around the WUI areas, or Communities at Risk, does not meet the planning area boundary. For planning and assessment purposes under this CWPP, "outlying areas" refers to the lands outside the WUI boundaries described below.

Wildland Urban Interface Description – West

For assessment and prioritization purposes, the Steering Committees identified the following seven sub regions as WUI areas, or Communities at Risk, within the West planning area:

Reservoirs – 71,787 acres with 53 structures. Resident population 133.
(This WUI includes Cultus Lake, Crane Prairie Reservoir and Wickiup Reservoir.)

Edison Trailhead – 4,591 acres with no structures. Resident population 0.

Evacuation Routes – 19,933 acres with 1 structure. Resident population 3.

Other Trailheads – 18,692 acres with no structures. Resident population 0.
(This WUI includes Millican Crater, Scott Pass, Pole Creek , and Whychus Creek Falls Trailheads.)

Round Mountain – 126 acres with no structures. Resident population 0.

Lakes – 24,919 acres with 4 structures. Resident population 10.
(This WUI includes Todd Lake, Sparks Lake, Elk Lake, Hosmer Lake and Lava Lake.)

Tumalo Falls – 4,704 acres with no structures. Resident population 0.

The outlying areas that surround the WUI boundaries in the West planning area include 335,252 acres with 4 structures and an estimated resident population of 10. There are over 1,000 individual developed campsites in the outlying areas. The outlying areas and these campsites are not included in the assessments.

Fuel Hazards and Ecotypes – West

The majority of the vegetation in the West WUI and outlying areas includes:

- Ponderosa pine
- Lodgepole pine
- Mixed conifer
- Bitterbrush
- Riparian areas

Ponderosa pine is currently found throughout the West planning area. Historically, ponderosa pine forests contained more understory grasses and shrubs than are present today. These plants combined with fallen pine needles, formed fast-burning fuels that led to recurrent widespread burning. Frequent low-intensity ground fires that occur 11-15 years characterize the fire regime for ponderosa pine. The pattern of low ground fires and stand dynamics resulted in the open park-like conditions that early inhabitants and visitors found in the region.

Less stand management, logging activity and highly effective wildland fire suppression, have significantly altered the ponderosa pine forest type. Removal of the larger "yellow belly" pines has dramatically decreased clumpy open forests, replacing them with more evenly spaced and smaller "black-bark" forests. Similar to other species of conifer forest types, the suppression of fire has greatly increased the stocking levels and density of trees, creating ladder fuels and putting the stands at risk of attack from insects and disease. These factors have contributed to more intense fires in ponderosa pine forests in recent years.

Mature **lodgepole pine** in central Oregon is characterized by dense, uniform stands, an absence of other species, and a general lack of understory shrubs (although bitterbrush is often found with mature lodgepole pine). Lodgepole pine forests exhibit a moderate severity fire regime with a fire return interval between 60 and 80 years. Fire in lodgepole pine stands can be low, moderate, or severe over time and often result in full stand replacement.

In addition to fire, mountain pine beetles are worth noting as a significant disturbance agent as the two processes are linked. The fire cycle in lodgepole pine is 60-80 years and occurs as follows: a stand replacement fire leads to stand regeneration ➔ Dead snags from the fire fall to the forest floor and fuels begin to accumulate ➔ Windstorms blow more trees to the ground ➔ Forest fires burn some of the downed logs and lead to heart rot in the standing trees ➔ The heart rot stresses the stands and makes it vulnerable to attack by the mountain pine beetle ➔ A major outbreak of the mountain pine beetle causes significant mortality and soon the conditions are ripe for another stand replacement fire.

Mixed conifer forests include mixed stands of ponderosa pine, Douglas-fir, grand fir, western larch, lodgepole pine and subalpine fir. Generally, these forests are adjacent to ponderosa pine stands at lower elevations and mountain hemlock or subalpine fir forests at the upper limits. Because mixed conifer forests span such a wide range of environments, they are divided into two types: warm and dry, and cool and moist. The warm, dry mixed conifer type is found at lower elevations, down to 800 feet in some cases. As elevation increases, conditions become favorable for the cool and moist mixed conifer types. While elevation is a major factor in how these forest types are distributed, other factors such as soils, aspect, topographical features, and climate patterns also play a role.

Historically, mixed conifer stands experienced both low intensity and stand replacement fires at 35 – 100 year intervals.

Bitterbrush occurs throughout the planning area on all aspects and elevations and is frequently found with mature lodgepole pine. Fire severely damages bitterbrush, especially if rain is not received shortly after a burn. Bitterbrush is fire dependent, but not fire resistant. It regenerates mostly from seed after a fire and often sprouts from caches of seeds made by rodents. Bitterbrush will sprout after burning regardless of the severity of the burn and matures relatively quickly. Consequently, the West planning area is rich with patches of bitterbrush that burn well on their own and provide fire-ready ladder fuels for taller tree stands.

A **riparian area** is defined as the strip of moisture-loving vegetation growing along the edge of a natural water body. The exact boundary of the riparian area is often difficult to determine because it is a zone of transition between the water body and the upland vegetation. With eight bodies of water within the WUI areas in the West planning region, riparian areas are of great concern from the wildland fire perspective. Vegetation types in these riparian areas vary and include trees, shrubs, grasses, forbs and willows. The primary exposure from a wildland fire perspective is during the spring before "green up" has occurred and autumn when the vegetation has cured and is highly flammable. Riparian areas include all rivers and tributaries within the planning area.

The result of the fuel hazards and forest types in the West WUI and outlying areas is an overgrowth of trees, forest floor fuels and an abundance of dead or dying vegetation that contribute to a substantially elevated risk of wildland fires that are difficult to control. These overly dense conditions lead to fire behavior that produce flame lengths over eight feet with crowning and torching that can result in stand replacement severity fires.

Not only have large, stand replacement fires not occurred, but also the more frequent low intensity fires have not been allowed to burn either. This practice of fire exclusion along with insufficient vegetation/fuels reduction has resulted in the buildup of excessive live and dead fuels.

Paulina & East Lakes

Much like the areas identified in the West planning area, this planning area includes the popular recreation sites Paulina and East Lakes, the Newberry National Volcanic Monument Lava Caves and Lava Forest, and Sugar Pine Butte. Also known for outstanding camping, fishing and other recreational opportunities, this planning area serves the transient population in the summer months that poses a tremendous challenge for fire suppression, evacuation and general life safety.

This region encompasses 257,991 acres of heavily forested ponderosa and lodgepole pine. The forest floor is thick with bitterbrush, rabbitbrush, down wood and other native and non-native species. COFMS manages 223,529 acres, or 87% of the land in this area, and allows for the long term lease by special use permitees at Paulina and East Lakes Resort.

The eastern edge of the planning boundary meets the west side of the Brothers/Hampton planning boundary. State Highway 20 and the Bend CWPP border this area to the north while the Deschutes/Klamath and Deschutes/Lake County lines border it to the south. The western edge of the Paulina & East Lakes planning area meets the southeastern edge of the Greater Bend CWPP, and the eastern flanks of the Upper Deschutes River Coalition CWPP, the Sunriver CWPP and the Greater La Pine CWPP boundaries. See Appendix A for maps.

Wildland Urban Interface Description – Paulina & East Lakes

For assessment and prioritization purposes, the Steering Committees identified the following five sub regions as WUI areas, or Communities at Risk, within the Paulina & East Lakes planning area:

Paulina & East Lakes – 28,501 acres with 3 structures. Resident population 8.

Newberry Visitor Center & Lava River Cave – 4,180 acres with no structures, no population.

Newberry Lava Cast Forest – 4,776 acres with no structures, no population.

Evacuation Routes – 10,233 acres with 1 structure. Resident population 3.

Sugar Pine Butte – 126 acres with no structures, no population.

The outlying areas that surround the WUI boundaries in the Paulina & East Lakes planning area include 210,175 acres with no structures and no population. These acres are not included in the assessments.

Fuel Hazards and Ecotypes – Paulina & East Lakes

The majority of the vegetation in the Paulina & East Lakes WUI and outlying areas includes:

- Ponderosa pine
- Lodgepole pine
- Mixed conifer
- Bitterbrush
- Riparian areas

General descriptions of ponderosa pine, lodgepole pine, mixed conifer, bitterbrush and riparian areas along with the wildland fire hazards presented by each, are under Fuel Hazards and Ecotypes – West starting on page 8.

Ponderosa pine, mixed conifer and **lodgepole pine** are found throughout the planning area, along with bitterbrush and riparian areas. The riparian areas include those found adjacent to and downstream from Paulina Lake and East Lake.

The result of the fuel hazards and forest types in the Paulina & East Lakes WUI and outlying areas is an overgrowth of trees, forest floor fuels and an abundance of dead or dying vegetation that contribute to a substantially elevated risk of wildland fires that are difficult to control. These overly dense conditions lead to fire behavior that produces flame lengths over eight feet with crowning and torching that can result in stand replacement severity fires.

As with the fuel buildup in the West planning area, stand replacement fires have not occurred. More frequent low intensity fires have not been allowed to burn either. This practice of fire exclusion along with insufficient vegetation/fuels reduction has resulted in the buildup of excessive live and dead fuels.

Alfalfa

The Alfalfa region of Deschutes County encompasses 77,222 acres and includes the unincorporated community of Alfalfa. The residential area of Alfalfa is predominantly agricultural, used for grazing and farming. There are 365 structures in this area and an estimated population of 913.

Approximately 80% or 61,462 acres of the lands in the Alfalfa planning area are publicly owned and federally managed by Central Oregon Fire Management Service, the combined managing organization of the Bureau of Land Management and the US Forest Service.

The Alfalfa planning area is bordered on the eastern and northern sides by Crook County. The southern edge of the Alfalfa planning boundary meets State Highway 20 and Crook County. The western edge borders the Greater Bend CWPP boundary. See Appendix A for maps.

Located in the southeastern portion of the Alfalfa planning area is the Badlands Wilderness Study Area. Approximately 30,000 acres of public land is reserved here as a wilderness study area. The Badlands was created as a wilderness study area by a BLM resource area land management plan in 1981. Since that time numerous studies have confirmed the land designation. The 2005 update of the BLM land management plan utilizes this confirmation to allow for the management of these acres as a wilderness area pending final legislation by Congress. Current management activities restrict all motorized vehicles and consequently no mechanical treatment of fuels.

The Bureau of Land Management has future plans to complete a Fire Management Plan for the Badlands which will allow a full range of management strategies including the monitoring of wildland fire.

Because Alfalfa WUI does not include any portion of the Badlands Wilderness Area, there will be no effect on fuels treatments within those zones.

Wildland Urban Interface Description – Alfalfa

For assessment and prioritization purposes, the Alfalfa Steering Committee identified the following WUI area, or Community at Risk, within the Alfalfa planning area:

Alfalfa – 48,586 acres with 365 structures. Resident population 913.

The outlying areas that surround the WUI boundaries in the Alfalfa planning area include 28,636 acres with no structures and no population. These acres are not included in the assessments.

Fuel Hazards and Ecotypes – Alfalfa

The majority of the vegetation in the Alfalfa WUI and outlying areas includes:

- Western juniper
- Western sage

Throughout the Alfalfa planning area, western juniper and western sage are the predominant forest fuels.

During its first few decades, **western juniper** is extremely susceptible to wildfire and spends most of its resources putting down major root systems instead of developing thick bark or other fire resistant characteristics. Prior to settlement of the western United States, juniper was frequently killed by wildfires that moved through the landscape approximately every 30 years. As a result, it grew almost exclusively in rocky areas and outcrops where fire could not burn it. Over the past century, western juniper has established itself outside the rocky outcrops and into much of central Oregon. Specifically, the increase in its range is attributed to more effective fire suppression which has allowed stands to grow unchecked by fire and past grazing practices of domestic livestock which has decreased the amount of ground vegetation needed to carry a fire.

Western sage and a variety of sagebrush species are also found throughout the Alfalfa planning area. Like western juniper, sagebrush is highly susceptible to fire and rarely re-sprouts. Under historic conditions, sagebrush took approximately 20 years to reach pre-burn densities following a wildfire event. Without periodic fire, sagebrush reaches an uncharacteristic old-growth form with increased height, woody stems, and thick accumulations leaves – all highly flammable. Changes in fire occurrence along with fire suppression and livestock grazing have contributed to the current condition of sagebrush in the planning area. Introduction of annuals, especially cheat grass, has increased fuel loads so that fire carries easily, increasing the potential for significant and dangerous fire behavior.

The result of the fuel hazards and forest types in the Alfalfa WUI and outlying areas is overstocked juniper fuel beds with an abundance of sage and ground fuels that contribute to a substantially elevated risk of wildland fires that are difficult to control. These conditions lead to fire behavior that produces flame lengths over eight feet with crowning and torching that can result in stand replacement severity fires. Not only have large, stand replacement fires not occurred, but also the more frequent low intensity fires have not been allowed to burn either. This practice of fire exclusion along with insufficient vegetation/fuels reduction has resulted in the buildup of excessive live and dead fuels.

Brothers/Hampton

The Brothers/Hampton planning area encompasses 685,381 acres (1,070 square miles). There are 26 structures in this area and an estimated population of 66. This planning area is predominantly agricultural with grazing and farming the principal land use.

The Bureau of Land Management manages 75% (514,035 acres) of the lands in the Brothers/Hampton planning area, while the Oregon Department of Forestry tends 7% or 47,976 acres. The balance of the land, 117,610 acres, is privately owned.

The southern edge of the Brothers/Hampton planning boundary is bordered by the Lake County line and the west side meets the Alfalfa planning area. The Deschutes/Crook County line borders the area to the east and north with a small portion of Harney County meeting the boundary on the east side. See Appendix A for maps.

Wildland Urban Interface Description – Brothers/Hampton

For assessment and prioritization purposes, the Brothers/Hampton Steering Committee identified the following six sub regions as WUI areas within the planning area:

Hampton North of Highway 20 – 111,170 acres with 3 structures. Resident population 8.

Fox Butte Road – 21,899 acres with no structures, no population.

Millican/Brothers/Pine Mountain – 238,995 acres with 22 structures. Resident population 55.

Hampton South of Highway 20 – 51,455 acres with 1 structure. Resident population 3.

Glass Butte Road – 24,398 acres with no structures, no population.

Evacuation Routes – 5,705 acres with no structures, no population.

The outlying areas that surround the WUI boundaries in the Brothers/Hampton planning area include 231,759 acres with no structures and no population. These acres are not included in the assessments.

Fuel Hazards and Ecotypes – Brothers/Hampton

The majority of the vegetation in the Brothers/Hampton WUI and outlying areas includes:

- Western juniper
- Western sage

General descriptions of western juniper and western sage along with the wildland fire hazards presented by each are under Fuel Hazards and Ecotypes – Alfalfa starting on page 13.

Western juniper and **sage** are the predominant species of vegetation in this planning area.

The result of the fuel hazards and forest types in the Brothers/Hampton WUI and outlying areas is overstocked juniper fuel beds with an abundance of sage and ground fuels that contribute to a substantially elevated risk of wildland fires that are difficult to control. These conditions lead to fire behavior that produce flame lengths over eight feet with crowning and torching that can result in stand replacement severity fires. Not only have large, stand replacement fires not occurred, but also the more frequent low intensity fires have not been allowed to burn either. This practice of fire exclusion along with insufficient vegetation/fuels reduction has resulted in the buildup of excessive live and dead fuels.

Community Assessments of Risk

The East & West Deschutes County Community Wildfire Protection Plan utilizes two risk assessment methodologies: the Oregon Department of Forestry Assessment of Risk Factors and a group assessment based on the current Fire Regime and Condition Class of the landscape.

ODF Assessment of Risk Factors

The Oregon Department of Forestry Assessment of Risk Factors is based on five categories of evaluation that include a variety of information designed to identify and evaluate wildland fire risk across Oregon: risk of wildfire occurrence, hazard, protection capability, human and economic values protected and structural vulnerability.

Risk of Wildfire Occurrence

The risk of wildfire occurrence refers to the likelihood of a fire occurring based on historical fire occurrence, home density and ignition sources. The calculations are based on the number of wildland fire starts per 1,000 acres per ten years, as well as home density and ready ignition sources like dry lightning storms, debris burning and equipment use. A score is given for each evaluation with the total scores corresponding to a level of risk in each category.

Table 1 summarizes the risk of wildfire occurrence in each WUI area.

Table 1 – Risk of Wildfire results in each WUI area

	What is the likelihood of a fire occurring?
West	
Reservoirs	15 Moderate
Edison Trailhead	20 Moderate
Evacuation Routes	15 Moderate
Other Trailheads	10 Low
Round Mountain	15 Moderate
Lakes	15 Moderate
Tumalo Falls	10 Low
Alfalfa	
Alfalfa	20 Moderate
Paulina & East Lakes	
Paulina & East Lakes	15 Moderate
Newberry Visitors Center and Lava River Cave	10 Low
Evacuation Routes	15 Moderate
Newberry Lava Cast Forest	10 Low
Sugar Pine Butte	10 Low
Brothers/Hampton	
Hampton N. of Hwy 20	25 Moderate
Fox Butte Road	20 Moderate
Millican, Brothers Pine Mountain	30 High
Hampton S. of Hwy 20	25 Moderate
Glass Butte Road	20 Moderate
Evacuation Routes	25 Moderate

Risk: Low = 0 – 13 points; Moderate = 14 – 27 points; High = 28 – 40 points.

The current condition of the vegetation on the federal and private lands adjacent to and within the WUI boundaries ranges from low to high, with an average rating of moderate based on the risk of fire occurring in these areas. The conditions pose an elevated risk of catastrophic loss from wildland fire. The communities of Bend, La Pine, Sunriver, Sisters and Redmond and surrounding rural neighborhoods are also threatened by embers falling on the community from an adjacent wildland fire.

Hazard

The hazard rating describes resistance to control once a fire starts based on weather, topography (including slope, aspect and elevation), vegetation and crown fire potential. As stated earlier, effective wildland fire suppression has led to the extensive buildup of overstory and ground vegetation in the wildland urban interface. The hazard ratings follow for each WUI area.

Table 2 summarizes the hazard ratings for each WUI area.

Table 2 – Hazard rating results in WUI areas

	Hazard rating
West	
Reservoirs	75 Extreme
Edison Trailhead	80 Extreme
Evacuation Routes	75 Extreme
Other Trailheads	78 Extreme
Round Mountain	80 Extreme
Lakes	75 Extreme
Tumalo Falls	81 Extreme
Alfalfa	
Alfalfa	66 Extreme
Paulina & East Lakes	
Paulina & East Lakes	79 Extreme
Newberry Visitors Center and Lava River Cave	76 Extreme
Evacuation Routes	76 Extreme
Newberry Lava Cast Forest	76 Extreme
Sugar Pine Butte	70 Extreme
Brothers/Hampton	
Hampton N. of Hwy 20	66 Extreme
Fox Butte Road	66 Extreme
Millican, Brothers Pine Mountain	66 Extreme
Hampton S. of Hwy 20	66 Extreme
Glass Butte Road	66 Extreme
Evacuation Routes	66 Extreme

Hazard: Low = 0 – 9 points; Moderate = 10 – 40 points; High = 41 – 60 points; Extreme = 61 – 82 points.

A wildland fire could start within any of these areas or in any of the forested areas adjacent to or surrounding them. With a fire of any significance, it could be difficult to assemble the resources necessary to adequately address all of the fire and life safety issues that could arise in the early stages of emergency operations.

Protection capability

The ratings for this category are based on fire protection capability and resources to control and suppress wildland and structural fires. The ratings also consider response times and community preparedness. In each of the three sub regions, there is no organized structural fire protection. Only wildland fire protection is provided by Oregon Department of Forestry, the Forest Service and/or the BLM. When local resources are fully engaged, all agencies can request additional resources through the State of Oregon and request federal resources through the Pacific Northwest Coordination Center.

Although the inter-agency cooperation is high in these areas, the fact remains they are outside any organized fire district, and response times to a fire are greatly reduced. The hazard rating for each WUI area within the four project areas is high, posing an extreme risk of catastrophic loss for residents and visitors in these areas.

Oregon Department of Forestry (ODF)

The Central Oregon District of the Oregon Department of Forestry does not provide fire protection in the planning areas. ODF does provide wildland fire response for fires burning on, or threatening private forestlands paying a Forest Patrol Assessment.

USDA Forest Service and USDI Bureau of Land Management

The Forest Service and BLM provide wildland fire protection on the federal lands within the West, Alfalfa and Brothers/Hampton planning areas. Together, they are identified as the Central Oregon Fire Management Service (COFMS). COFMS includes the Deschutes National Forest, the Ochoco National Forest, the Crooked River National Grassland, and the Prineville District of the BLM. These four units are managed cooperatively under combined leadership, with an Interagency Fire Management Officer, two Deputy Fire Management Officers, and a Board of Directors including decision makers from both agencies, with Forest Service District Rangers and BLM Field Managers. COFMS has a central dispatching facility in partnership with the Oregon Department of Forestry that serves as a communications hub for fire and fuels operations, as well as safety and training issues for COFMS. In total, COFMS provides the following resources: 15 engines, 4 initial attack hand crews, 6 prevention units, 2 dozers, 2 water tenders, 1 helicopter with module, 35 smokejumpers, 2 Inter-regional Hotshot crews, 1 air tanker, 1 National Fire Cache, 1 interagency dispatch center and 20 overhead staff positions.

Anytime an incident grows beyond the capability of the local resources a request may be made to the State and to the Pacific Northwest Coordination Center for additional wildland fire fighting resources.

Law Enforcement

Police services are provided by Deschutes County Sheriff. The Sheriff's Department has responsibility for ensuring safe and orderly evacuations in the event of a major emergency. A number of resources have been allocated to accomplish this task including hi/lo sirens on vehicles; emergency notification via radio and television; reverse 9-1-1 capability; and Sheriff's Department staff. Any issues relative to a major emergency are addressed by the Countywide Disaster Plan and the County Department of Emergency Services.

Oregon State Police assists the federal agency law enforcement efforts and cooperates with Deschutes County for protection in the three planning areas.

Community Preparedness

Also under the category of Protection Capabilities, the ODF Assessment of Risk examines a community's level of organization and preparedness to respond in an emergency situation. The assessment considers whether the area has an organized stakeholder group that looks out for its own area through mitigation efforts, a phone tree, etc. Or, does the area only receive outside efforts such as newsletters, mailings or fire prevention information from other groups? The Steering Committees used local knowledge to determine the level of preparedness.

In the West planning area, preparedness for a wildland fire emergency is difficult to measure due to the transient nature of the visiting population. With only 155 residents, the WUI areas in the West are at a strong disadvantage when it comes to preparation for and notification of an emergency. The same can be said for the Paulina & East Lakes project area.

In the Alfalfa and Brothers/Hampton planning areas, community preparedness is somewhat better. With a year round population, although small at 989, most community members are at least acquainted with each other and could execute a phone tree or similar neighbor-to-neighbor notification if needed. In both areas, with no structural fire protection, most residents are aware of the high risk of fire in the area and have taken steps to educate themselves about those risks and reduce some of the potential for catastrophic loss.

Table 3 summarizes protection capability of each WUI area.

Table 3 – Protection Capability results in WUI areas

	Protection Capabilities
West	
Reservoirs	17 High
Edison Trailhead	17 High
Evacuation Routes	17 High
Other Trailheads	17 High
Round Mountain	17 High
Lakes	17 High
Tumalo Falls	17 High
Alfalfa	
Alfalfa	17 High
Paulina & East Lakes	
Paulina & East Lakes	17 High
Newberry Visitors Center and Lava River Cave	17 High
Evacuation Routes	17 High
Newberry Lava Cast Forest	17 High
Sugar Pine Butte	17 High
Brothers/Hampton	
Hampton N. of Hwy 20	27 High
Fox Butte Road	27 High
Millican, Brothers Pine Mountain	27 High
Hampton S. of Hwy 20	27 High
Glass Butte Road	27 High
Evacuation Routes	27 High

Protection capability: Describes fire protection capability and resources based on type of protection, response times and community preparedness. Low = 0 – 9 points; Moderate = 10 – 16 points; High = 17 – 40 points. A risk factor of low is the goal for each community.

Values Protected

These ratings are based on home density per ten acres and community infrastructure such as power substations, transportation corridors, water and fuel storage, etc. The category rating for each WUI area within the four project areas is low, due to the lack of community infrastructure, except for the Brothers/Millican/Pine Mountain WUI which scored a moderate rating.

Based on Deschutes County tax records from 2006, there are 62 structures in the West and Paulina & East Lakes planning areas. If a large wildland fire occurs in this area the loss to property and businesses could be in the hundreds of thousands. The larger concern is with the potential closure of US Highway 97, the only north/south interstate highway east of the Cascade Mountains in Oregon. The economic loss to the Central Oregon region could exceed $3.5 million per day.

There is a total population of 66 in the Brothers/Hampton WUI areas and a total of 923 in the Alfalfa WUI areas. Like the West WUI areas, although a wildland fire could cause a substantial economic loss to homes and businesses there, of great concern is the potential closure of State Highway 20, a major transportation route and known as the second busiest highway in Oregon.

Across the four project areas, the essential infrastructure is minimal but includes roads, some utilities, one electrical sub-station, and the two transportation corridors mentioned above. Although the list is short, the cost to replace any of the essential infrastructure could be in the tens of millions.

Table 4 summarizes human and economic values protected.

Table 4 – Human & Economic Values Protected results in WUI areas

	Human & Economic Values Protected
West	
Reservoirs	12 Low
Edison Trailhead	12 Low
Evacuation Routes	2 Low
Other Trailheads	2 Low
Round Mountain	2 Low
Lakes	2 Low
Tumalo Falls	12 Low
Alfalfa	
Alfalfa	22 Moderate
Paulina & East Lakes	
Paulina & East Lakes	12 Low
Newberry Visitors Center and Lava River Cave	22 Moderate
Evacuation Routes	2 Low
Newberry Lava Cast Forest	2 Low
Sugar Pine Butte	2 Low
Brothers/Hampton	
Hampton N. of Hwy 20	22 Moderate
Fox Butte Road	2 Low
Millican, Brothers Pine Mountain	22 Moderate
Hampton S. of Hwy 20	12 Low
Glass Butte Road	2 Low
Evacuation Routes	2 Low

Values protected: Describes the human and economic values in the community based on home density per ten acres and community infrastructure such as power substations, transportation corridors, water and fuel storage, etc. Low = 0 – 15 points; Moderate = 16 – 30 points; High = 31 – 50 points.

Structural Vulnerability

In recent years, many neighborhoods in each of the three planning areas have taken steps to decrease the vulnerability of structures to wildland fire. Although attitudes and behaviors towards fire are changing in the Central Oregon area thanks to educational programs like FireFree, the exponential population growth and continued development into the wildland urban interface present fresh challenges each year. The Steering Committees put high value on the importance of making structures and neighborhoods as fire safe as possible.

Each Steering Committee addressed structural vulnerability in the planning areas based on a combined approach including the NFPA 1144 survey and the statewide ODF Assessment of Risk standards. Ranging from low to high, the survey included assessments of the following criteria on a community-wide scale rather than lot by lot:

- Flammable roofing – wood or non-wood present;
- Defensible space – meets local requirements or not;
- Ingress/egress – one, two or more roads in/out;
- Road width – 0 to more than 24 feet wide;
- All season road conditions – surfaced or not, with grade more or less than 10%;
- Fire Service access – more or less than 300 ft, with or without turnaround;
- Street signs – Present with 4" reflective characters or absent.

Adequate water resources were not considered in this assessment and are addressed as a priority item under Action Plan and Implementation.

The following is an explanation of the risk assessment values followed by a table with the four project areas and the WUI areas in each, the value ratings (with corresponding scores) and the total scores for each community in each category. The higher the total score in this assessment, the higher the overall risk.

Table 5 summarizes structural vulnerability in each WUI area.

Table 5 – Structural Vulnerability results in WUI areas

	Structural Vulnerability
West	
Reservoirs	67 High
Edison Trailhead	21 Low
Evacuation Routes	16 Low
Other Trailheads	20 Low
Round Mountain	20 Low
Lakes	67 High
Tumalo Falls	67 High
Alfalfa	
Alfalfa	39 Moderate
Paulina & East Lakes	
Paulina & East Lakes	57 Moderate
Newberry Visitors Center and Lava River Cave	45 Moderate
Evacuation Routes	16 Low
Newberry Lava Cast Forest	18 Low
Sugar Pine Butte	20 Low
Brothers/Hampton	
Hampton N. of Hwy 20	17 Low
Fox Butte Road	17 Low
Millican, Brothers Pine Mountain	17 Low
Hampton S. of Hwy 20	17 Low
Glass Butte Road	17 Low
Evacuation Routes	17 Low

Structural vulnerability: Describes the likelihood that structures will be destroyed by wildfire based on roofing and building materials, defensible space, separation of homes, fire department access and street signage. Low = 0 – 30 points; Moderate = 31 – 60 points; High = 61 – 90 points.

Table 6 presents a summary of each assessment category in each WUI area and a total score from each category assessed.

Table 6 – ODF Assessment of Risk – Summary

West	What is the likelihood of a fire occurring?	Hazard rating	Protection Capabilities	Human & Economic Values Protected	Structural Vulnerability	Total score
Reservoirs	15 Moderate	75 Extreme	17 High	12 Low	67 High	**186**
Edison Trailhead	20 Moderate	80 Extreme	17 High	12 Low	21 Low	**150**
Evac Routes	15 Moderate	75 Extreme	17 High	2 Low	16 Low	**125**
Other Trailheads	10 Low	78 Extreme	17 High	2 Low	20 Low	**127**
Round Mountain	15 Moderate	80 Extreme	17 High	2 Low	20 Low	**134**
Lakes	15 Moderate	75 Extreme	17 High	2 Low	67 High	**176**
Tumalo Falls	10 Low	81 Extreme	17 High	12 Low	67 High	**187**
Paulina & East Lakes						
Paulina & East Lakes	15 Moderate	79 Extreme	17 High	12 Low	57 Moderate	**180**
Newberry Visitors Center and Lava River Cave	10 Low	76 Extreme	17 High	22 Moderate	45 Moderate	**170**
Evacuation Routes	15 Moderate	76 Extreme	17 High	2 Low	16 Low	**126**
Newberry Lava Cast Forest	10 Low	76 Extreme	17 High	2 Low	18 Low	**123**
Sugar Pine Butte	10 Low	70 Extreme	17 High	2 Low	20 Low	**119**
Alfalfa						
Alfalfa	20 Moderate	66 Extreme	17 High	22 Moderate	39 Moderate	**164**
Brothers Hampton						
Hampton N. of Hwy 20	25 Moderate	66 Extreme	27 High	22 Moderate	17 Low	**157**
Fox Butte Road	20 Moderate	66 Extreme	27 High	2 Low	17 Low	**132**
Millican, Brothers Pine Mountian	30 High	66 Extreme	27 High	22 Moderate	17 Low	**162**
Hampton S. of Hwy 20	25 Moderate	66 Extreme	27 High	12 Low	17 Low	**147**
Glass Butte Road	20 Moderate	66 Extreme	27 High	2 Low	17 Low	**132**
Evacuation Routes	25 Moderate	66 Extreme	27 High	2 Low	17 Low	**137**

Fire Regime - Condition Class

Fire Regime - Condition Class considers the type of vegetation and the departure from its natural fire behavior return interval.

Five natural (historical) fire regimes are classified based on the average number of years between fires (fire frequency) combined with the severity of the fire on dominant overstory vegetation. Fire regimes I (ponderosa pine & bitterbrush) and II (western juniper) and III (mixed conifer) and IV (lodgepole pine) are the predominant representations on the landscape in the four planning areas. Western juniper for example has a fire return interval of approximately 30 years with high potential for stand replacement fires. Therefore, it falls within Fire Regime II.

Table 7 summarizes Fire Regimes.

Table 7 – Fire Regimes

Fire Regime Group	Fire Frequency	Fire Severity	Plant Association Group
I	0 – 35 years	Low severity	Ponderosa pine, manzanita, bitterbrush
II	0 – 35 years	Stand replacement	Western juniper
III	35 – 100+ years	Mixed severity	Mixed conifer dry
IV	35 – 100+ years	Stand replacement	Lodgepole pine
V	> 200 years	Stand replacement	Western hemlock, mixed conifer wet

Condition Class categorizes a departure from the natural fire frequency based on ecosystem attributes. In Condition Class 1, the historical ecosystem attributes are largely intact and functioning as defined by the historical natural fire regime. In other words, the stand has not missed a fire cycle. In Condition Class 2, the historical ecosystem attributes have been moderately altered. Generally, at least one fire cycle has been missed. In Condition Class 3, historical ecosystem attributes have been significantly altered. Multiple fire cycles have been missed. The risk of losing key ecosystem components (e.g. native species, large trees, soil) is low for Class 1, moderate for Class 2, and high for Class 3.

Table 8 summarizes Condition Class.

Table 8 – Condition Class

Condition Class	Attributes
Condition Class 1	▪ Fire regimes are within or near an historical range. ▪ The risk of losing key ecosystem components is low. ▪ Fire frequencies have departed from historical frequencies (either increased or decreased) by no more than one return interval. ▪ Vegetation attributes are intact and functioning within an historical range.
Condition Class 2	▪ Fire regimes have been moderately altered from their historical range. ▪ The risk of losing key ecosystem components has increased to moderate. ▪ Fire frequencies have departed (either increased or decreased) from historical frequencies by more than one return interval. This change results in moderate changes to one or more of the following: fire size, frequency, intensity, severity or landscape patterns. ▪ Vegetation attributes have been moderately altered from their historic ranges.
Condition Class 3	▪ Fire regimes have been significantly altered from their historical range. ▪ The risk of losing key ecosystem components is high. ▪ Fire frequencies have departed (either increased or decreased) by multiple return intervals. This change results in dramatic changes to one or more of the following: fire size, frequency, intensity, severity, or landscape patterns. ▪ Vegetation attributes have been significantly altered from their historic ranges.

Table 9 shows the acreage and percentage of Condition Class 1, 2, and 3 lands in each WUI area.

Table 9 – Percentage & Acres of Condition Class

West	CC 1 Acres	CC 1 %	CC 2 Acres	CC 2 %	CC 3 Acres	CC 3 %
Reservoirs	47,524	66.2%	24,034	33.5%	229	0.3%
Edison Trailhead	4,115	89.7%	475	10.3%	1	0.0%
Evacuation Routes	8,409	42.2%	11,512	57.8%	12	0.0%
Other Trailheads	9,416	50.4%	9,276	49.6%	0	0.0%
Round Mountain	34	27.1%	92	72.9%	0	0.0%
Lakes	13,724	55.1%	10,913	43.8%	282	1.1%
Tumalo Falls	2,362	50.2%	2,337	49.6%	8	0.2%
Outlying areas	115,532	34.5%	217,989	65.0%	1,731	0.5%
Totals	201,116		276,628		2,263	
Alfalfa						
Alfalfa	8,924	18.4%	39,662	81.6%	0	0.0%
Outlying areas	7,180	25.1%	21,456	74.9%	0	0.0%
Totals	16,104		61,118		0	
Paulina & East Lakes						
Paulina & East Lakes	12,171	42.6%	15,974	56.1%	356	1.3%
Newberry Visitors Center and Lava River Cave	17	0.4%	4,162	99.6%	1	0.0%
Evacuation Routes	4,292	41.9%	5,915	57.8%	26	0.3%
Newberry Lava Cast Forest	1,750	36.6%	3,017	63.2%	9	0.2%
Sugar Pine Butte	0	0.0%	126	100.0%	0	0.0%
Outlying areas	76,091	36.2%	133,161	63.4%	923	0.5%
Totals	126,529		284,591		1,315	
Brothers/Hampton						
Hampton N. of Hwy 20	67,001	60.3%	44,169	39.7%	0	0.0%
Fox Butte Road	8,650	39.5%	13,248	60.5%	1	0.0%
Millican, Brothers Pine Mountain	90,071	37.7%	148,910	62.3%	14	0.0%
Hampton S. of Hwy 20	34,944	67.9%	16,511	32.1%	0	0.0%
Glass Butte Road	6,293	25.8%	18,105	74.2%	0	0.0%
Evacuation Routes	3,059	53.6%	2,646	46.4%	0	0.0%
Outlying areas	127,879	55.2%	103,872	44.8%	8	0.0%
Totals	337,897		347,461		23	

As shown, the highest percentages of Condition Class 2 and 3 lands lie in the more rural areas with the larger acreages. Steering Committees gave consideration for the number of acres in Condition Class 2 and 3 in order to rank them for fuels treatment priority. The Steering Committees present Table 10 as a composite of the ODF Assessment of Risk (Table 6) and the Condition Class assessment (Table 9). The Steering Committees used Table 10 as a method to identify and assign priorities for treatment.

Table 10 – Composite of ODF Assessment of Risk & Condition Class

Community at Risk WUI area	ODF Rank	Highest Percentage of Condition Class 2 and 3 lands	Group consensus of both assessments with consideration for population and structures
West			
Reservoirs	2	2	**1**
Edison Trailhead	4	7	**5**
Evac Routes	7	1	**2**
Other Trailheads	6	4	**6**
Round Mountain	5	7	**7**
Lakes	3	3	**3**
Tumalo Falls	1	5	**4**
Paulina & East Lakes			
Paulina & East Lakes	1	1	**1**
Newberry Visitors Center and Lava River Cave	2	3	**3**
Evacuation Routes	3	2	**2**
Newberry Lava Cast Forest	4	4	**4**
Sugar Pine Butte	5	5	**5**
Alfalfa			
Alfalfa	1	1	**1**
Brothers Hampton			
Hampton N. of Hwy 20	2	2	**2**
Fox Butte Road	5	4	**4**
Millican, Brothers Pine Mountain	1	1	**1**
Hampton S. of Hwy 20	3	5	**6**
Glass Butte Road	5	3	**3**
Evacuation Routes	4	6	**5**

The Steering Committee carefully considered the rank in both assessments and ultimately relied on values at risk (population and structures) to compensate for the fact that some areas have thousands of acres in Condition Class 2 and 3, but very few people and homes actually at risk. For example, the Paulina & East Lakes WUI has a less percentage of Condition Class 2 and 3 lands than the Newberry Visitors Center and the Lava Cast Forest. Based on the knowledge that the Paulina & East Lakes WUI is heavily populated during fire season in the summer months, the group elected to rank it as a higher priority for fuels treatment than some areas with higher percentages of Condition Class 2 and 3 lands.

Areas of special concern

Critical Transportation Routes

Critical Transportation Routes do not have a standard definition in Deschutes County. For purposes of this CWPP, the Steering Committees define Critical Transportation Routes as:

- all routes necessary for the support of routine flow of commerce to and/or through the greater planning areas,
- all routes that could be used for potential evacuation of citizens and/or visitors from a wildland fire threat to public safety,
- routes needed for emergency ingress and egress to a wildland fire incident, not including unimproved or "two-track" roads,
- and, all routes needed to protect and support critical infrastructure (power substations, communication transmission lines, water and fuel storage, public service facilities, recreation facilities, etc).

A detailed look at specific ingress/egress issues for each WUI area is included under Recommendations to Reduce Structural Vulnerability. This issue is also highlighted under Action Plan and Implementation.

Wildland/Structural Fire Protection

The majority of the land in the CWPP planning area is unprotected with no organized structural fire protection. Of the 176,000 acres of unprotected lands in Deschutes County, approximately 135,000 acres fall within this CWPP. With multiple recent examples of significant structural losses, the Steering Committees expressed great concern for this issue and recognized the need for the development of both structural and wildland protection. This is a high priority for the Steering Committees and is addressed in the Action Plan and Implementation sections.

Water

The WUI areas in this CWPP are either unprotected or unincorporated or both. This presents significant challenges in the event of a wildland fire as there are no water resources for fire suppression or protection. Adequate water resources were not considered in the assessment. This topic is addressed under Action Plan and Implementation.

Prioritized Hazard Reduction Recommendations and Preferred Treatment Methods

The Steering Committees agreed that the East & West Deschutes County Community Wildfire Protection Plan is a living tool that can be used for multiple outcomes. The following is an outline of the prioritized WUI areas, or Communities at Risk, as well as preferred treatments and goals for hazardous fuels reduction under this Community Wildfire Protection Plan.

Prioritized Communities at Risk

Based on the combined assessment as shown in Table 13 and group consensus the Steering Committees have identified the following prioritized WUI areas for hazardous fuels reduction treatments on public and private lands in the planning areas:

Based on group consensus, the Steering Committees determined priorities for hazardous fuels treatment in the four project areas:

West

Highest priorities WUI areas:

- Reservoirs
- Evacuation Routes
- Lakes
- Tumalo Falls

High priorities:

- Edison Trailhead
- Other Trailheads
- Round Mountain

Paulina & East Lakes

Highest priorities:

- Paulina & East Lakes
- Evacuation Routes
- Newberry Visitors Center and Lava River Cave

High priorities:

- Newberry Lava Cast Forest
- Sugar Pine Butte

Alfalfa

Highest priority:

- Alfalfa WUI area.

Brothers/Hampton

Highest priorities:

- Millican/Brothers/Pine Mountain
- Hampton North of Hwy 20
- Glass Butte Road

High Priorities:

- Fox Butte Road
- Evacuation Routes
- Hampton South of Hwy 20

Priorities and goals

With critical needs assessed and priority areas listed, the Steering Committees identified the following goals to meet the Purpose on page 1 of the East & West Deschutes County CWPP:

- Reduce hazardous fuels on public lands
- Reduce hazardous fuels on private lands (both vacant and occupied)
- Reduce structural vulnerability
- Increase education and awareness of wildland fire threat
- Identify, improve and protect critical transportation routes

Preferred treatments and goals for hazardous fuels reduction

The standard of the East & West Deschutes County CWPP is to decrease the risk of uncharacteristic wildland fire behavior by reducing fuel loads to that which can produce flame lengths of less than four feet. This enables safe and effective initial attack. In general, the goal is to return the landscape to Condition Class 1 and provide for a healthy, fire resilient landscape that supports the social, economic and ecological values of Central Oregon area residents and visitors. In mixed conifer and lodgepole stands however, Condition Class 1 is still a highly volatile and fire prone landscape. In these stands, the goal is also to reduce extreme fire behavior for firefighter and public safety.

The Steering Committees recognize the effectiveness and value of maximizing treatment efforts in areas that are adjacent to federal, state, or private projects and recommends that future projects consider these benefits when selecting areas for treatment. The following specific standards are recommended for treatments on public and private lands within the WUI areas in each of the four project areas.

Federal and state owned lands

Federal lands are managed by the US Forest Service and the Bureau of Land Management and occupy 85% of lands in the planning area, located in all four project areas.

State owned lands 3% of the planning area but include blocks of land in the Alfalfa and Brothers/Hampton planning areas.

It is the intent of the Steering Committees that each of the four project areas is subject to expedited measures for hazardous fuels treatment and allocation of funds to protect the communities and neighborhoods as stipulated by the Healthy Forests Restoration Act.

Federal and state land managers are strongly encouraged to work toward the overall standard by treating Condition Class 2 and 3 lands with the goal of returning the landscape to Condition Class 1 and reducing the potential of extreme fire behavior by reducing fuel loads to that which can produce flame lengths of less than four feet:

- Within a ¼ mile buffer of adjacent WUI areas. Treatments should begin here and increase in ¼ mile increments until the WUI boundary is reached.
- Within 500 feet of any critical transportation route or ingress/egress that could serve as an escape route from adjacent communities at risk.

The standard will be achieved through a variety of treatment methodologies such as thinning, prescribed burning and mechanical treatments. Specific treatments should address fuels issues on a landscape scale rather than acre by acre. These treatments shall be consistent with the current Upper Deschutes Resource Management Plan and the COFMS Five -Year Fire Management Plan on the federal lands.

The Steering Committees also encourage federal land managers to work with local landowners to minimize road closures that could be used as alternate evacuation routes from Communities at Risk.

Private and county owned lands

Private lands occupy 12% of the four planning areas. This is privately owned land and is considered developed, or in rare cases intermixed with development. The County owns only 2,221 acres in this planning area. The Steering Committees recommend that County owned lands be treated in the same manner as privately owned lands.

<u>Private lands with structural improvements</u>

On private lands with structural improvements, the goal is for each structure to meet the Default Standards identified in the Oregon Forestland – Urban Interface Fire Protection Act of 1997, also known as Senate Bill 360. This statute outlines standards and requirements for defensible space on private property that receives fire protection from Oregon Department of Forestry.

Although the Oregon Department of Forestry does not provide wildland fire protection in each of the four planning areas, the Steering Committees support the goals and standards of Senate Bill 360. The Steering Committees agreed that the Default Standards from Senate Bill 360 are the minimum goal to achieve on private and county owned lands throughout the WUI areas. Citizens and homeowners can achieve this goal by complying with SB 360 standards regardless of whether they are afforded wildland fire protection by Oregon Department of Forestry.

A detailed description of the standards is available from the Oregon Department of Forestry in the handbook for the Oregon Forestland – Urban Interface Fire Protection Act of 1997. This information is also available at www.oregon.gov/ODF/fire/SB360.

The Default Standards under the Oregon Forestland – Urban Interface Fire Protection Act of 1997 are:

- Establish a primary fuel break of 30 feet around structures;
- Create fuel breaks around driveways longer than 150 feet;
- Remove tree branches within 10 feet of chimneys;
- Remove any dead vegetation that overhangs a roof;
- Remove flammable materials from under decks and stairways;
- Move firewood 20 feet away from structures;

Property owners can also achieve the Senate Bill 360 standards by taking advantage of FireFree and Firewise suggestions to create and/or maintain defensible space, a fire-resistant buffer that allows for effective first-response firefighting and a significantly reduced risk of the spread of fire. These national education programs promote a variety of fire safe actions to help prevent the spread of fire to protect individual homes and neighborhoods. Information about these programs can be found at www.firefree.org and www.firewise.org. More information is also listed in this plan under Recommendations to Reduce Structural Vulnerability.

Agricultural lands

Within the Alfalfa and Brothers/Hampton WUI areas, the majority of the private land is considered agricultural for farm or grazing use. In general, these acreages present a specific threat within WUI areas because they are often flat with a variety of grasses, weeds and shrubs. With wind of any significance, a wildland fire can race across these properties and direct flames and ember showers to nearby homes and structures. The Steering Committees recognize this risk and recommends that those acres that are primarily agricultural in use follow the guidelines under Senate Bill 360 for “High”.

Those guidelines are the same as described above for the Default Standards and also include a secondary fuel break of an additional 20 feet (a total of 50 feet).

The Steering Committees recommend that any vacant lots and acreages that are dominated by hazardous wildland fuels follow the guidelines under Senate Bill 360 for

"High Density Extreme" which also includes the standard of a 20-foot fuel break around each vacant lot with an additional 80 feet of fuel break for a total of 100 feet of defensible space around the lot.

Recommendations to Reduce Structural Vulnerability

Structural Vulnerability

There are only 446 structures spread across the four project areas in this CWPP. Structural vulnerability is addressed as a required evaluation under the ODF Assessment of Risk but more importantly, to assist local residents in preparing their properties against the threat of wildland fire. In addition, special use permitees can use the recommendations to address issues of structural vulnerability surrounding recreation sites and resorts. Based on the assessment of structural vulnerability for the ODF Assessment of Risk, Table 11 identifies the main hazards within the four project areas. For each hazard or risk listed, an action is recommended to address the threat or decrease the risk.

Adequate water resources for fire suppression were not considered as part of this assessment. This topic is addressed under Action Plan and Implementation.

Table 11 – Structural Vulnerability Hazards & Recommendations

WUI Area	Primary Hazards	Recommended Actions
West	Flammable roofing	Homeowner education (FireFree, Firewise, SB 360)
	Lack of defensible space around structures	Homeowner education (FireFree, Firewise, SB 360)
	Roads with only one road in/out	Establish additional routes, sign and maintain
	Lack of surfaced roads	Identify, upgrade & maintain
	Roads of insufficient width	Identify, upgrade & maintain
	Poor fire service access	Improve & maintain
	Lack of street signage	Identify, sign & maintain
Paulina & East Lakes	Flammable roofing	Homeowner education (FireFree, Firewise, SB 360)
	Lack of defensible space around structures	Homeowner education (FireFree, Firewise, SB 360)
	Roads with only one road in/out	Establish additional routes, sign and maintain
	Lack of surfaced roads	Identify, upgrade & maintain
	Roads of insufficient width	Identify, upgrade & maintain
	Poor fire service access	Improve & maintain
	Lack of street signage	Identify, sign & maintain
Alfalfa	Flammable roofing	Homeowner education (FireFree, Firewise, SB 360)
	Lack of defensible space around structures	Homeowner education (FireFree, Firewise, SB 360)
	Roads with only one road in/out	Establish additional routes, sign and maintain
	Lack of surfaced roads	Identify, upgrade & maintain
	Roads of insufficient width	Identify, upgrade & maintain
	Poor fire service access	Improve & maintain
	Lack of street signage	Identify, sign & maintain
Brothers/Hampton	Flammable roofing	Homeowner education (FireFree, Firewise, SB 360)
	Lack of defensible space around structures	Homeowner education (FireFree, Firewise, SB 360)
	Roads with only one road in/out	Establish additional routes, sign and maintain
	Lack of surfaced roads	Identify, upgrade & maintain
	Roads of insufficient width	Identify, upgrade & maintain
	Poor fire service access	Improve & maintain
	Lack of street signage	Identify, sign & maintain

Table 12 provides a checklist for residents seeking to reduce the risk of catastrophic losses to their homes and properties. The list is compiled from tips and suggestions from the FireFree and Firewise programs, which promote homeowner responsibility for reducing fire hazards on their property. The Steering Committee approves this combined checklist. More information about these programs can be found at www.firefree.org and www.firewise.org.

Table 12 – Defensible Space Checklist

☑ **What can I do to help prevent losses to my property and my neighborhood?**

- ❑ Post easy-to-read address signs so emergency crews can find your home.
- ❑ Reduce the density of nearby trees.
- ❑ Clear wood piles and building materials at least 20 feet away from your home.
- ❑ Remove low tree branches and shrubs. Trim up juniper and other trees at least 4 feet from the ground. Remove "ladder fuels" among trees.
- ❑ Keep grass and weeds cut low.
- ❑ Remove all branches and limbs that overhang roofs.
- ❑ Remove leaves & needles from gutters, roofs and decks.
- ❑ Remove dead plants and brush.
- ❑ Maintain a minimum of 30 feet of defensible space around your home.
- ❑ Screen vents and areas under decks with 1/8" metal mesh or fire resistant siding.
- ❑ Keep decks free of flammable lawn furniture, toys, doormats, etc.
- ❑ Choose fire-resistant roofing materials like metal, tile or composition shingles.
- ❑ Trim vegetation along driveways a minimum distance of 14' wide x 14' high for fire trucks.
- ❑ Choose fire resistive plants. Visit www.extension.oregonstate.edu/deschutes to view *Fire-Resistant Plants for the Home Landscape.*
- ❑ Use alternatives to burning debris like composting or chipping.
- ❑ If burning debris - do not burn building materials.

Other Recommendations

Education

As stated in the Purpose of the East & West Deschutes County CWPP, three of the goals for this planning effort are to:

- Instill a sense of personal responsibility for taking preventative actions regarding wildland fire,
- Increase public understanding of living in a fire-adapted ecosystem, and
- Increase the community's ability to prepare for, respond to and recover from wildland fires.

With these goals in mind, education and outreach are top priorities. The rapid influx of new residents is just one reason the Steering Committees place high value on the education of area residents and landowners. Many new residents are unfamiliar with wildland fire and have limited experience with issues like defensible space. Residents and visitors will continue to benefit from clear examples of what a fire resilient forest and community look like as well as easy access to resources that help them take action.

There are several opportunities to enhance educational efforts in the four project areas. Oregon Department of Forestry, the Central Oregon Fire Prevention Cooperative and Project Wildfire all provide wildland fire prevention programs through a variety of individual and collaborative efforts.

Some homeowners in the Alfalfa and Brothers/Hampton areas are well organized through homeowners associations, rangeland fire associations and other groups. These groups provide valuable ongoing education to their populations about the risks of catastrophic wildland fire and ways to improve their protection. The Steering Committees support these groups and encourages their formation in each project area to address the educational needs of current and incoming residents and visitors about living in a fire adapted environment and increasing personal responsibility for creating defensible space.

The Steering Committee also recommends support for projects that enhance a community's ability to communicate necessary information in the event of a wildfire. Programs that develop and maintain neighborhood phone trees or communication lists that identify neighbors who may need additional assistance during an evacuation are encouraged.

Utilizing the information in Tables 11 and 12, property owners are strongly encouraged to learn more about how they can reduce the hazards on their own property. Local residents are encouraged to contact Project Wildfire at (541) 382-1675 for information. Residents may also find additional information on how they can reduce hazards and protect themselves at www.firefree.org and www.firewise.org.

Action Plan and Implementation

The Steering Committees recognize that the East & West Deschutes County CWPP is a living tool with multiple applications. The following priority actions are intended to assist individuals and agencies in the implementation of this CWPP.

Priorities

Reduce hazardous fuels on public lands

Immediately following the acceptance and signed approval of this plan, the Steering Committees will make copies of the East & West Deschutes County CWPP available to all federal and state land managers including the Deschutes National Forest, the Bureau of Land Management, and the Oregon Department of Forestry. The intention of the Steering Committees is to engage in continued discussions with the communities in each project area and adjacent landowners to implement the CWPP and accomplish hazardous fuels reduction projects that address the prioritized WUI areas in the most expeditious manner possible. The Steering Committees recognize the effectiveness and value of maximizing treatment efforts in areas that are adjacent to federal, state, or private projects and recommend that future projects consider these benefits when selecting areas for treatment.

Reduce hazardous fuels on private lands

The intention of the Steering Committees is to engage in continued discussions with landowners to facilitate fuels reduction projects on private lands utilizing the list of prioritized WUI areas. These actions can be accomplished through education activities or grants for specific projects on private lands.

Reduce Structural Vulnerability

The Steering Committees are charged with the task of engaging community members to review the Structural Vulnerability Assessment in this CWPP and identify projects that will strengthen the potential for the neighborhoods to survive a catastrophic wildland fire within the WUI areas. Tables 11 and 12 can be utilized as a resource for homeowners to improve the fire resistance of their homes on an individual basis and also by groups to implement education programs in the WUI areas.

Additionally, support for county ordinances which regulate defensible space, vacant lots and open burning will greatly afford residents a common-sense prevention tool to assist in the mitigation of catastrophic losses to their property.

Establish Organized Fire Response in Unprotected Areas

The Steering Committees encourage local residents to work with county and state officials to develop an organized wildland and structural response to those unprotected areas within the CWPP boundary.

The Steering Committees also encourage local residents, special use permitees and Deschutes County to identify and assess the water resources available for fire suppression and protection in the WUI areas. The Steering Committees will make recommendations for projects to improve and ensure adequate water resources.

Increase Awareness and Education

The Steering Committees will work with Project Wildfire to review the educational programs available and identify potential projects for implementation in those Communities at Risk that have limited programs or that do not already participate in fire prevention education activities.

Identify, Improve and Protect Critical Transportation Routes

The Steering Committees will work with Deschutes County, and the Oregon Department of Transportation to identify and map existing transportation and evacuation routes in each WUI area. The Steering Committee will assist in conducting further assessments to determine the evacuation needs of each Community at Risk and identify potential projects to develop new routes and/or improving existing routes.

The Steering Committees encourage exploratory discussions with fire agencies and local landowners that address the issue presented when effective evacuation from an area is not available. Are "sheltering in place" and safe staging areas an option?

The Steering Committees will continue to encourage federal land managers to work with local landowners to minimize closures of roads that could be used as alternate evacuation routes from Communities at Risk.

Identify and Improve Water Resources

The Steering Committees will work with local fire and land management agencies, Deschutes County and residents to identify, map and make recommendations to improve potential water resources that may be utilized to contribute to fire suppression during a wildland fire.

Fund Projects

The Steering Committees will encourage and assist community groups in seeking funding for fuels reduction, educational, and other projects to decrease overall risks of loss from wildland fire.

Evaluation and Monitoring

The Steering Committees faced a complex task in the development of the East & West Deschutes County Community Wildfire Protection Plan. Implementing and sustaining these efforts will require a significant commitment. Building a collaborative and

cooperative environment with residents, community-based organizations, local government and the public land management agencies has been the first step in reducing the risk of loss from wildland fire. The Steering Committees pledge to maintain this cooperation with the public over the long-term with the commitment of all the partners involved.

At a minimum, the Steering Committee shall include: the Program Coordinator from Project Wildfire; a representative from Oregon Department of Forestry (ODF); a representative from Central Oregon Fire Management Service (COFMS), and Deschutes County along with members of the public.

The Steering Committee agrees that the East & West Deschutes County Community Wildfire Protection Plan will be a living document, intended to promote fuels reduction, educational, and other projects to decrease overall risks of loss from wildland fire; updated and revisited at least semi-annually to address its Purpose.

Project Wildfire will convene the Steering Committees at least twice per year, or as often as the Steering Committees deem necessary to implement and review the East & West Deschutes County Community Wildfire Protection Plan. Topics for discussion can include:

- Identification and assessment of new or treated risks.
- Evaluation and tracking of progress toward goals.
- Updating of maps.
- Adoption of new and/or revised priorities.
- Identification of specific projects.
- Discussion of grant opportunities and determination of projects eligible for funding.
- Writing of grants.
- Identification of appropriate projects to address additional items as outlined in the Action Plan for Structural Vulnerability, Education and Critical Transportation Routes.
- Coordination of additional items, projects and assessments.

Project Wildfire will ensure that the evaluation and monitoring activities listed above are addressed by a Steering Committee each year. As members of the Steering Committees change, Project Wildfire will ensure that it maintains a balanced representation of agency and public members, with a continued focus on inviting interested parties to participate in the review and planning process.